

REMARKS

By the above amendment, independent claims 12 and 13 have been amended to clarify features of the present invention in a manner which is considered to overcome the rejection of claims 12 - 14, 17 and 19 and 22 - 23 under 35 USC 112, second paragraph utilizing the Examiner's assumed recitations. Thus, applicants submit that all claims present in this application should now be considered to be in compliance with 35 USC 112, second paragraph.

As to the rejection of claims 12 - 14, 17, 19 and 22 under 35 USC 103(a) as being unpatentable over US Patent Publication No. 2003/0110611A1 to Lappen et al in view of US Patent No. 6,532,715 to Reinke et al and US Patent No. 4,722,298 to Rubin et al, and the rejection of claims 18 and 23 under 35 USC 103(a) as being unpatentable over Lappen et al, Reinke et al and Rubin et al, and further in view of US Patent No. 5,855,681 to Maydan et al, such rejections are traversed insofar as they are applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

At the outset, applicants note that the present invention is directed to the structural arrangement of a vacuum processing apparatus which is installed in a floor of a building, wherein the vacuum apparatus includes a transfer box which enables holding of a plurality of wafer cassettes installed at a front side portion thereof and a vacuum transfer unit disposed at a back side portion of the transfer box and detachably connected thereto with at least one of a plurality of vacuum processing chambers being disposed at a back or lateral side of the vacuum transfer unit and being detachably connected thereto as illustrated in Figs. 1 and 2 of the drawings of this application, for example. That is, as illustrated in Fig. 2(a), the transfer box is represented by reference numeral 108, a vacuum transfer unit is represented by

reference numeral 112, and a plurality of vacuum processing chambers are represented by reference numerals 103, 104, for example. As illustrated in Fig. 2(b), and as described at pages 15 and 16 of this specification, a connection interface 201 for connecting supply lines such as pipes for gases and refrigerants from separate locations or lines from the power sources is disposed on the rear side portion of the atmosphere block 101, of which the transfer box 108 is part, and supply lines of pipes and power lines extend from the connection interface 201 substantially linearly above the floor and underneath a connector portion between the transfer box and vacuum transfer unit so as to pass below the lock chamber unit 113 and below the center of the transfer unit 112, via an interface unit disposed on the frame 106, and are connected to each of the processing chambers. As shown, and as recited in independent claims 12 and 13 a plurality of connector of portions of utility paths, as represented by the pipes 203, which connect with paths from another floor of the building different from the floor of the building in which the vacuum processing apparatus is installed, are disposed so as to extend substantially linearly above the floor of the building and under the connection portion between the transfer box and the vacuum transfer unit 112, which connecting portion is represented for example, by a load lock chamber 113 from the back side surface portion of the transfer box 108, as now recited in independent claims 12 and 13. As described in the paragraph bridging pages 16 and 17 of the specification, this structural arrangement provides a smaller footprint for the apparatus and provides sufficient work space to be secured wherein an operation status is easily confirmed. Applicants submit that the aforementioned features are recited in independent claims 12 and 13 and the dependent claims of this application, and such features are not disclosed or taught in the cited art.

In applying the cited art to the claimed invention, the Examiner contends that Lappen et al discloses a vacuum processing apparatus including a transfer box, a vacuum transfer unit and at least one vacuum processing chamber, and including a portion such as a load lock chamber 13 connecting the vacuum transfer unit and the transfer box. Applicants note that Lappen et al is specifically directed to a carrier alignment tool system in which a carrier alignment tool 200 as shown in Figs. 3a, 3b and 3c comprises a metrology carrier frame assembly 210 which is secured to the carrier platform of a tool-board or other carrier handler in a manner substantially similar to that of an actual wafer carrier, such as the carrier 23 of Fig. 2 as described in paragraph [0032] of Lappen et al. However, Lappen et al provides no disclosure or teaching, irrespective of the Examiner's contention, regarding a plurality of connector portions of utility paths which connect with paths from another floor of the building different from the floor of the building in which the vacuum processing apparatus is installed, the plurality of connector portions of the utility paths being disposed so as to extend substantially linearly above the floor and under a connecting portion of the vacuum transfer unit from the back side surface portion of the transfer box, as recited in claim 12, with a similar recitation being provided in claim 13. Lappen et al provides no disclosure of the aforementioned structural features.

The Examiner, apparently recognizing that Lappen et al provides no disclosure of features regarding connector portions of utility paths, refers to Reinke et al as disclosing "a plurality of connector portions (at facilities integration plate figs. 1 - 3, 100 in Reinke) of utility paths which connect with paths arranged in another floor or a building different from a floor of the building in which the vacuum processing apparatus is installed so that the at least one vacuum processing

chamber is disposed above the floor, the plurality of connector portions being disposed substantially linearly under a connecting portion (Lappen, Fig. 1, 13) of the vacuum transfer unit and the back side surface of the transfer box ...”. (emphasis added). Irrespective of the Examiner’s contentions, applicants submit that Reinke et al provides no disclosure or teaching of connector portions of the utility paths being disposed so as to extend substantially linearly above the floor of the building and so as to extend under the connecting portion between the transfer box and the vacuum transfer unit from the back side surface of the transfer box. Looking to Reinke et al, while the facilities integration plate 100 is provided in an area which would appear to correspond to the area between the load lock chambers 13 in Lappen et al, and while providing for connection of utility paths from another floor of the building, as is apparent from Fig. 2 of Reinke et al, the various utility pipings from the facility integration plate 100, initially extend in a vertical direction above of the floor of the building, and cannot be considered to be disposed so as to extend substantially linearly above he floor of the building and under a connecting portion of the vacuum transfer unit from the back side surface portion of the transfer box. Accordingly, applicants submit that neither Lappen et al nor Reinke et al, taken alone, or in any combination thereof, provide for the aforementioned structural features of independent claims 12 and 13 and the dependent claims thereof. Thus, applicants submit that independent claims 12 and 13 and the dependent claims patentably distinguish over Lappen et al and Reinke et al taken alone or in any combination thereof in the sense of 35 USC 103 and such claims should be considered allowable thereover.

Applicants note that the Examiner has additional cited Rubin et al as disclosing a plurality of individual, independent, detachable processing units, and as

clearly illustrated in Figs. 1 and 2 of Rubin et al, for example, this patent also fails to disclose or teach a plurality of connector portions of the utility paths being disposed so as to extend substantially linearly above the floor of the building and under a connecting portion of the vacuum transfer unit from the back side surface of the portion of the transfer box, as recited in claims 12 and 13. Thus, applicants submit that the combination of Lappen et al, Reinke et al and Rubin et al, taken alone, or in any combination thereof fails to provide the recited structural features of claims 12 and 13 and the dependent claims thereof.

As to the further combination of the aforementioned references with Maydan et al, applicants submit that Maydal et al also fails to overcome the deficiencies of the aforementioned cited art in the sense of 35 USC 103, such that Maydan et al, taken alone, or in combination with, any or all of Lappen et al, Reinke et al and Rubin et al, fail to recite the features of independent claims 12 and 13 regarding the connector portions of the utility paths being disposed so as to extend substantially linearly above the floor of the building and under a connecting portion of the vacuum transfer unit from a back side surface portion of the transfer box. According, applicants submit that all claims patentably distinguish over this proposed combination of references in the sense of 35 USC 103 and should be considered allowable thereover.


With respect to the dependent claims, applicants note that irrespective of the contentions by the Examiner, the dependent claims, when considered in conjunction with the parent claims recite further features of the present invention which are not disclosed or taught in the cited art such that all claims should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance and issuance of an action of favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 648.43120CC2), and please credit any excess fees to such deposit account.

Respectfully submitted,

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